Virginia Educational Technology Advisory Committee

Technology Support Personnel Work Team Report

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Technology Support Personnel

The charge for this committee is to articulate technology support for the K-12 environment.

Discussions have taken place among committee members electronically and in face-to-face meetings.

A number of articles and reports relevant to this topic have been reviewed.

Literature Review-

Themes which emerged from the sources reviewed by the committee were these:

- While automation and technology in libraries have streamlined some tasks, it has created others. Consequently, personal attention to students and teachers as well as book repairs have suffered.
- While technology allows teachers to engage. students in more complex learning tasks; managing and maintaining networks, computers and other peripherals, fall outside the realm of a teacher's time and expertise
- Immediate, "on-call" response network support is critical.
- One person cannot do it all. Collaboration among librarians, technical specialists and instructional specialists (and school systems!) is recommended.
- Schools are unique and must develop support strategies suited to their needs and abilities to implement that support.
- While strategies for using existing, in-house personnel can sustain a measure of support, the increasing demands of hardware, networking and training will require additional personnel.

Historically, schools have purchased substantial amounts of hardware and software. Too often it remains underutilized because they have given minimal consideration to other mandatory aspects of technology. These include initial and upgrade training, sustained support for sustained increased instructional use, consumables, maintenance, and repair. Dede (1989) suggests that a 70%/30% allocation of funding is standard; seventy-percent for hardware and software, while 30% is designated for all other aspects. Teachers receive less technical support than any other group of professionals. (Lucas, 1996).

H.L. Fuller (1995), from the Harvard Graduate School of Education in a draft of his article entitled "Computer-Mediated Communications Networks and the Organizational Life of Schools" states:

> "New technologies require the cultivation of new technical skills. It is not necessary -- probably counterproductive -- to require that all school personnel become technical experts in the fine points of CMC (Computer-Mediated Communications) implementation, but those who wish to exploit the technology's potential will have to develop at least a working knowledge of select applications. The experience of both the private sector and the educational community dictate that the organization recognize the crucial importance of training and technical support for teachers and administrators."

Lucas (I 996) ponders the result of those educators who do not receive training and support. He states, "What happens when a teacher or librarian (or administrator) experiences several glitches without timely assistance? The same thing that happens in too may classrooms: the frustration becomes too great and the technology cry is abandoned." A teacher's job is to teach. Teachers seek tools that will assist them in providing the best learning environment possible but time must be spent "on task", not re-establishing network connections. Library-media specialists want efficient, effective checkout systems. They are willing, to invest time to learn new systems for making their libraries "state of the art". Too often they are also asked to maintain these systems to the neglect of other responsibilities, such as repairing books and assisting children as they select books. Administrators want a system that will send data quickly and reliably. If more of their day is spent on "fixing the system" than the time required to write the report, how frequently will they use that system?

The following list of support tasks have been identified by this committee. Schools and schools divisions will assign these tasks to individuals in unique ways that best suit their needs and budgets allocations. Some tasks fall into more than one category. Such items suggest points of collaboration. While several of these tasks may sometimes be performed by one person, they nevertheless must be performed. Specifically named personnel and job titles will vary from site to site. The performance of these tasks should not necessitate a reduction or abandonment of currently assigned responsibilities, but rather people who have technology as a part of their background might be considered as more desirable for filling positions. Support that is viewed most favorably by teachers are those who have a broad

background in curriculum and/or classroom experiences and technology. For example, if hiring someone to fill a system-wide staff development position, include in the required qualifications instructional technology expertise.

School:

1) Management of networks
- Maintenance of network
- Adding users
- Resolve software conflicts
- Loading/removing software
- E-mail management
- Restoring crashed servers
- Firewall management
- Homepage management
- Serves on division committees

2) Curriculum integration of technology
- Serves on division committees
- Selecting software
- Needs assessments
- Training and staff development
- Evaluation of teacher technology growth

3) General troubleshooting of hardware and software
- Ability to resolve:
  jammed printers, broken cable pins, dirty mice, network connection lost, printer selection
- Knowledge of report procedures for more complex problems

4) Management of resources which includes inventories
- Selecting software
- Disseminating technology updates/news
- Homepage management
- Resolve software conflicts
- Ordering, software
- Management of computer labs
- Loading/removing software
- Headphones
- Changing printer cartridges

Serves on division committees

Reporting major technical maintenance incidents **Central Office in Schools:**

1) WAN management
Works closely with Director of Technology
Serves on division committees

2) Director of Technology
Implements district technology plans,
Evaluates progress and needs in the area of technology
Facilitates between WAN management and staff development
Serves on division committees
Staff Development
Technology able and aware
Works closely with the Director of Technology
Serves on division committees

The following models of technology support implementation vary in their definitions of roles and responsibilities of support personnel but each begins with a technology plan that spans several years. The plans include funding not only for hardware and software but personnel as well. The first model, from Bay County Florida, utilizes a three-tier approach, drawing heavily on in-house support from dedicated teachers. This school district has 27,000 students, nineteen elementary, six middle and four high schools. This information is readily available to all staff, faulty and administrators via their homepage:

> "There are three levels of technical support available to educators and support personnel within Bay District Schools. Our "first line of defense" is a group of the most dedicated educators you will ever meet. Like many, these individuals have acquired needed technical skills covering an impressive spectrum of information and instructional technologies, mostly on their own time. As county educators and employees, the individuals at Tier One are tasked in assisting you with the resolution of your technical problems. Please recognize that many of these individuals also carry a considerable class load (which varies from site-to-site). While each bring a variety of prior skills to their tasks, they are occasionally pulled from their sites for training in everything from network administration to fundamental operating system troubleshooting. Your understanding is appreciated."

While creative use of in-house abilities, talents and knowledge is possible, it cannot be relied upon as the sole source of support. Dr. Alan Bain (1996), assistant headmaster for Brewster Academy in Wolfeboro, New Hampshire. describes his school's four-year implementation plan for technology, which includes expanded support positions:

> "A phased approach was taken to introduce the Model and associated technology once the infrastructure had been placed. A four-year implementation plan was developed based upon a year of planning and needs assessment ... With regards to technology support personnel, the school began the program with a .75 position as technology coordinator to manage introduction of the program. This has now grown to a full-time technology coordinator/network manager, a part time support person, student computer user group, and a maintenance contract that, in 1995, put a technician onsite for three hours per day. By September of 1996, the school will require a full-time technician as the program is expanded to the 12th grade. Brewster's experience with the Mac platform has been excellent and is evidence of a recent study by the Gartner Group, which found significantly reduced maintenance costs associated with the Macintosh environment." (Bain, 1996)

The business sector is well acquainted with the planning and investment it takes to maintain the average America job. Lucas (I 996) indicates that "the average worker in America can take advantage of $50,000 worth of capital invested in that job.

Bob Peacock (1995) from School District 82 in Terrace, British Columbia, Canada agrees with the idea of using in-house expertise but only as one element of support. He states, "While sometimes costs can be minimal, there will always be costs." He indicates that while teachers can perform some roles, additional personnel is a reality that must be faced due to ever-increasing demands:

> "Three years ago the District hired a Technology Coordinator who's job is best **t@,**
> described as a "helping" teacher providing inservice, consulting, trouble-shooting, and other duties. job description) As a result of this position many teachers have taken the lead into the education use of computers. At present the District employs two audio/visual/computer technicians. As the number of computers, LAN's, WAN and access to the Internet have increased so have their workload. Hearing the concern from the schools, the School District built into their budget the monies necessary to hire a third technician this year."

To finance, plan, manage and maintain the more complex educational environments that are emerging as a result of technology's growth in schools, the idea of community must be expanded. (David, 1990) Partnerships that extend beyond the school grounds must be nurtured. Baldridge & Deal (1983) urge that, "Planning councils must involve a variety of people."

Business expertise could prove as valuable as their financial backing. On June 27, 1995, Dr. Donald W. Ingwerson (I 996), Superintendent Los Angeles County Office of Education, Downey, California organized a "Technology for Learning Summit". The school district's goal was stated publicly: "Within the next five years, we will move our school districts from the bottom 10% in technology and telecommunications education, to the top 10% in the nation!" He describes this partnership of educators, parents, industry, business and community leaders:

> "Very simply, this was a county-wide "call-to-arms" to both the public sector and private sector to collaborate as never before for the benefit of the county's children. The summit meeting was well-attended by many community leaders asking, "How can we help?" One of our early supporters was Davidson & Associates, a Torrance, California-based educational software developer. Their gift of $1 million in state-of-the-art software gave us one of our first visible community supporters -- and a partner who helped us decide that teacher technology training needed to be at the core of our implementation plan. From there, the plan -- and our community support -- grew into a multi-hued fabric, pieced together to include educators, foundations, businesses, agencies, organizations, school districts and parents who are dedicated to the principle that every one of our students will be connected to the future through technological education."

Recommendations:

Limited support and training can come from within.

Additional personnel for technology support is needed. The most successful models have a full-time technology person at each building.

Seek out and educate the larger community to your needs and garner their support, in terms of people and funds.

Technology support for a school or school district will be defined differently, for each situation is unique. The Internet offers models, suggestions.' and resources for structuring support specific to the needs of your school system. The varied tasks outlined by this committee are intended to serve as a framework for educators, administrators and those interested members of the larger community. This committee urges that additional funding be sought so that those who have full-time responsibilities are not recruited for yet more tasks to perform. Computer networks do not run themselves. Many aspects of support require specialized training and can only be performed by those who have appropriate certification and high levels of expertise. Henry J. Becker's (1 994) study of exemplary technology-using teachers showed that teachers are four times more likely to use computers routinely when there is a full-time technical support person at the school.

Administrators, teachers and library media specialists have existing, clearly defined sets of responsibilities, which often exceed the timeframe of the school day. Technology should become an integral tool in the K-12 environment, not an additional burden. Teachers, administrators and library media-specialists have specifics needs and uses for technology. These needs require initial training, updating, sustained staff development, on going, support and evaluation of progress and needs. Some of this support and training can come from within limits. There will come a time when additional personnel must be added. The dynamic nature of technology necessitates garnering expertise and information from a variety of sources and people. The business community has been known this for many years.

Technology is costly in terms of money, time and people. Its costs are ongoing. Updating, retraining and sustained support are mandatory to its success. Technology's costs are not prohibitivee

when many people and resources combine their efforts. The support of the local and state community can be initiated by what schools have known for many years. Education is the key. Educate the wider community. Plan with them, make them vested partners. Lucas (1996) emphasizes this thought "Proponents of the technology tools must start a program to educate school board members and the community to make it happen." Students need its benefits now.

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